EXECUTIVE SUMMARY

PROJECT OBJECTIVES, PURPOSE AND NEED

This Draft Environmental Impact Report/Environmental Assessment (EIR/EA) has been prepared by the California State Lands Commission (CSLC) in accordance with the California Environmental Quality Act (the CEQA) to inform the public and to meet the needs of local, State, and Federal permitting agencies to consider the Northern Inlet Jetty Restoration Project proposed by Cabrillo Power I, LLC (referred to in this document as the "Applicant").

The key goals and objectives of the Northern Inlet Jetty Restoration Project (proposed Project) are to:

- Mitigate expected cumulative sedimentation impacts to Agua Hedionda Lagoon associated with implementation of the San Diego Association of Governments (SANDAG) Regional Beach Sand Project and regulatory requirements to backpass sand recovered from the Lagoon to the north of the inlet channel;

- Maintain the existing longshore transport process in the vicinity of the Lagoon by increasing the sand bypassing rate and making more sand available down-coast between dredge events;

- Minimize potential effects on biological resources – Several alternative jetty configurations were assessed for their potential to bury bottom habitat. The proposed Project, due to its relatively small footprint, would have a correspondingly smaller direct impact (0.4 acres) on biological resources;

- Increase sand volume available to down-coast cities between dredge events – The jetty restoration project would increase the amount of sand in the littoral system down-coast of Agua Hedionda Lagoon between dredge events by increasing the rate and volume of sand bypassing the Lagoon mouth. This is a key regional benefit of the proposed Project;

- Issuance of a new right of way easement by the CSLC for the inlet channel to facilitate the Applicant's continued use of Agua Hedionda Lagoon for cooling water for the Encina Generation Station; and

- Limit the frequency of maintenance dredging in Agua Hedionda Lagoon ("Lagoon") to allow continued economical use of the Lagoon.

DESCRIPTION OF PROPOSED PROJECT

The Applicant proposes to reconstruct a 200-foot-long seaward extension of an existing 378-foot-long jetty located on the north side of the northern inlet to Agua Hedionda Lagoon in northern San Diego County, immediately offshore of Carlsbad, California. The purpose of the jetty extension would be to reduce sand entrainment in the Lagoon, thereby reducing the frequency of dredging in the Lagoon to no more than once every two years. The Applicant owns and operates the Encina Generating Station, which produces electric power for use within San Diego County and generally in the western United States, and which uses the Lagoon for power plant cooling water. Sand entrainment and the resulting shoaling are exacerbated by the operation of the Lagoon for cooling water. The Applicant and the previous owner, San Diego Gas & Electric, have conducted maintenance dredging in the Lagoon more than 25 times since 1954, typically at intervals of about two years. The proposed Project is located on submerged property owned by the State of California and administered by the CSLC under existing Lease WP871.1 issued to the Applicant.

ALTERNATIVES TO PROPOSED PROJECT

Five alternatives were considered, as follows:

- Alternative Jetty Configurations /Lengths (Angled Dogleg Jetty);
- Increased (Annual) Lagoon Maintenance Dredging;
- Offshore Water Intake Structure/Cessation of Lagoon Maintenance Dredging;
- Reduced Maintenance Dredging;
- No Project Alternative.

There are no alternative jetty configurations that would achieve the project objectives and still demonstrably avoid the identified significant impacts on aesthetic resources, recreation, hydrology and water quality, and biological resources. The Increased (Annual) Lagoon Maintenance Dredging Alternative and the No Project Alternative would avoid the significant impacts associated with the proposed Project, but would not meet the Project objective of reducing the frequency of lagoon maintenance dredging. The Offshore Water Intake Structure/Cessation of Lagoon Maintenance Dredging Alternative has the potential to avoid significant impacts and achieve the Project objectives with mitigation. The Reduced Maintenance Dredging Alternative has the

potential to avoid significant impacts and has the potential to partially achieve the Project objectives by reducing the volume of material dredged annually, thereby saving capital resources. A bathymetric monitoring program would be required to assure the achievement of the Project objective.

ENVIRONMENTAL IMPACTS AND MITIGATION

An assessment of potential significant effects of the proposed Project resulted in identification of the following Class I and II impacts:

- Biological Resources: specifically, the loss of surfgrass habitat offshore of North Beach due to sand deposition **(Class II).**
- Hydrology and Water Quality: specifically, the potential for decreased beach width at Middle Beach and South Beach resulting from the deflection of bypassed sand away from these local beaches (**Class II).**
- Aesthetics/Visual Resources: specifically, the potential impacts related to decreased beach width south of the northern inlet **(Class II).**
- Recreation: specifically, the potential changes in surfing conditions that conflict with existing surfing related recreational use opportunities and use in the vicinity of the proposed Project **(Class I).**
- Recreation: specifically, the impacts to beach recreation opportunity and use caused by narrowing of beach widths south of the proposed Project **(Class II).**

Impacts related to hydrology and water quality, aesthetics/visual resources, and recreation resources related to beach erosion can be mitigated through a beach sand replenishment program that assures beach widths are maintained at Middle Beach and South Beach at 2001 widths. Mitigation for this impact would involve bathymetric monitoring of beach widths and based upon the bathymetric surveys, quantification of the amount of sand required for artificial beach sand replenishment.

Impacts to surfing recreation are considered Class I impacts. Mitigation is required but impacts will not be reduced to less-than-significant. Mitigation would entail monitoring surf conditions to document the nature and extent of potential alterations in surf conditions and conducting studies to determine physical causes of the alterations and identification of feasible engineering solutions to improve surf conditions.

Table ES-1 presents a summary of impacts and mitigation measures for the proposed Project. This table is presented by issue area. Within each issue area each impact is

described and classified, and recommended mitigation is listed, and the level of impact with mitigation is stated. All significant adverse impacts that remain significant after mitigation (identified as Class I in this document) are presented first, followed by Class II significant adverse impact that can be eliminated or reduced below an issue's significance criteria. Lastly, adverse impacts that do not meet or exceed an issue's significance criteria (Class III) are listed, followed by beneficial impacts (Class IV).

COMPARISON OF PROPOSED PROJECT AND ALTERNATIVES

The No Project Alternative would avoid all of the identified significant impacts upon aesthetic resources, recreation, hydrology and water quality, and biological resources. This would mean the proposed Project would not be constructed and the lagoon would continue to be dredged as frequently as needed, potentially every one or two years. The beaches adjacent to the lagoon would be retained in their present condition, as would the existing recreational and biological resources. There would be no change in hydrology and water quality.

The alternative of reducing the magnitude of dredging in Agua Hedionda Lagoon would avoid all of the identified significant impacts upon aesthetic resources, recreation, hydrology and water quality, and biological resources associated with the proposed Project, and reduce the negative effects on biological resources in the Lagoon related to overdredging. This alternative would require annual dredging to remove only the volume of sand accumulated since the previous dredging event, along the centerline and flood delta of the Outer Basin, and the dredging would not exceed a depth of about -4 feet NVGD. This alternative would partially achieve the Project objectives by reducing the capital expenditures associated with maintenance dredging. The extent and the amount of maintenance dredging would be reduced, but this Alternative would not reduce the frequency of dredging.

The construction and operation of an offshore cooling water intake would have short-term impacts involving bottom disturbance of sandy habitat, and long-term impacts relating to fish entrainment and turbidity, but would avoid all of the identified significant impacts associated with the proposed Project, and would achieve the Applicant's objective of reducing frequency of dredging. The offshore intake would need to be designed to reduce the potential entrainment and turbidity impacts to less than significant levels, but it represents the "environmentally superior alternative" as discussed on Page ES-14. A potential impact associated with the cessation of maintenance dredging with operation of an offshore cooling water intake is degradation of biological values in Aqua Hedionda Lagoon from degraded water quality associated

with the closure of the entrance to Agua Hedionda Lagoon. Closure of the entrance to the Lagoon would affect tidal circulation within the Lagoon and degrade water quality, impacting biological values. This impact would be mitigated to less than significant with maintenance dredging to allow tidal circulation.

The State CEQA Guidelines (Section 15126.6 (d)) requires that an EIR include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed Project. A matrix displaying the major characteristics and significant environmental effects of each alternative may be used to summarize the comparison. **Table ES-2** provides a comparison of the proposed Project with each of the Alternatives evaluated in this document, including the No Project Alternative, Offshore Water Intake Structure/Cessation of Lagoon Maintenance Dredging, and Reduced Dredging.

Table ES.1 Summary of Environmental Impacts for the Proposed Project

Impact Class
I = Significant adverse impact that remains significant after mitigation.
II = Significant adverse impact that can be eliminated or reduced below an issue's significance criteria.
III = Adverse impact that does not meet or exceed an issue's significance criteria.
IV = Beneficial impact.

Impact No.	Impact	Impact Class	Recommended Mitigation Measures
Section 4. 1 Biological Resources			
BIO-4	Impacts to Surfgrass Population. Surfgrass would potentially be buried by sand deposition associated with the restored jetty.	II	**BIO-4** Annual Monitoring and Habitat Compensation. Hard substrate reefs at North Beach will be monitored for five years to quantify any losses to surfgrass populations. Surfgrass habitat lost will be compensated by transplanting surfgrass rhizomes to hard substrate habitat on the reconstructed northern inlet jetty
BIO-2	Settlement of Jetty by *Caulerpa taxifolia.* Habitat provided by reconstructed jetty could be utilized by *Caulerpa taxifoli,* although it is unlikely that *Caulerpa* settlement will occur.	III	None required.
BIO-3	Loss of Sessile Invertebrates. Some populations of sessile invertebrates on lower relief areas would be lost, but this would not substantially reduce the population or substantially modify the ecosystem in general.	III	None required.

Impact No.	Impact	Impact Class	Recommended Mitigation Measures
BIO-5	Impacts to Turf Algae, Eisenia, and Associated Invertebrates. Loss of turf algae, brown kelp, Eisenia, and associated invertebrates through sand burial.	III	None required.
BIO-1	Increased Fish Foraging at Jetty. The new jetty structure will potentially attract a variety of fish that will use the jetty for both shelter and food.	IV	None required.
Section 4.2 Hydrology and Water Quality			
WQ-2	Beach Width Reduction on Middle Beach and South Beach. Impacts to coastal processes and changes in sand deposition and erosion could reduce the widths of Middle and South beaches.	II	**WQ-2** Artificial beach sand replenishment is recommended to reduce this impact to Class III less-than-significant. Bathymetric surveys are needed to identify substantial reductions in beach width and reductions in the volume of sand present to confirm the need and volumes for artificial beach sand replenishment.
WQ-1	Beach Deposition on North Beach. Impacts to coastal processes and patterns of sand deposition could result in the widening of North Beach.	IV	None required.

Section 4.3 Aesthetics/Visual Resources			
VIS-1	Beach Width Reduction on Middle Beach and South Beach. Potential short- and long-term increases in erosion causing decreased beach width for about 1 mile south of the northern inlet jetty.	II	**VIS-1** Implement Mitigation Measure MM WQ-2.
Section 4.4 Recreation			
REC-2	Changes in Surfing Conditions at Tamarack Beach. Potential changes in surfing conditions potentially conflict with established recreational use and have the potential to substantially alter surfing-related existing recreational use opportunities.	I	**REC-2** Mitigation would be required but may not reduce impacts to less than significant level. Mitigation would include monitoring surf changes; determining physical changes responsible for surf alterations, and determining feasible engineering solutions to improve surf conditions.
REC-3	Changes in Surfing Conditions at South Beach. Potential changes in surfing conditions potentially conflict with established recreational use and have the potential to substantially reduce surfing-related existing recreational use opportunities.	I	**REC-3** Mitigation would be required but may not reduce impacts to less than significant level. Mitigation would include monitoring surf changes, determining physical changes responsible for surf alterations, and determining feasible engineering solutions to improve surf conditions.
REC-4	Narrowing of Middle Beach and South Beach. Conversion of sandy beaches into gravel beaches will substantially conflict with existing recreational uses.	II	**REC-4** Implement Mitigation Measure MM WQ-2.
REC-1	Increased Width of North Beach. The widening of North Beach will be a beneficial impact to certain beach-related recreational activities.	IV	None required.

Table ES.2 Summary of Environmental Impacts for Proposed Project and Alternatives

Impact Class
I = Significant adverse impact that remains significant after mitigation.
II = Significant adverse impact that can be eliminated or reduced below an issue's significance criteria.
III = Adverse impact that does not meet or exceed an issue's significance criteria.
IV = Beneficial impact.

Impact No.	Impact Description	Proposed Project	No Project	Alt 1: Offshore Water Intake Structure/ Cessation of Lagoon Maintenance Dredging	Alt 2: Reduced Maintenance Dredging
Section 4.1 Biological Resources					
BIO-1	Increased Fish Foraging at Jetty. The new jetty structure will potentially attract a variety of fish that will use the jetty for both shelter and food.	IV	-	-	-
BIO-2	Settlement of Jetty by *Caulerpa taxifolia*. Habitat provided by reconstructed jetty could be utilized by *Caulerpa taxifolia*, although it is unlikely that Caulerpa settlement will occur,.	III	-	-	-
BIO-3	Loss of Sessile Invertebrates. Some populations of sessile invertebrates on lower relief areas would be lost, but this would not substantially reduce the population or substantially modify the ecosystem in general.	III	-	-	-

Impact No.	Impact Description	Proposed Project	No Project	Alt 1: Offshore Water Intake Structure/ Cessation of Lagoon Mainte-nance Dredging	Alt 2: Reduced Mainte-nance Dredging
BIO-4	Impacts to Surfgrass Population. Surfgrass would potentially be buried by sand deposition associated with the restored jetty.	II	-	-	-
BIO-5	Impacts to Turf Algae, Eisenia, and Associated Invertebrates. Loss of turf algae, brown kelp Eisenia, and associated invertebrates through sand burial.	III	-	-	-
Alt 1 BIO 1	Impact from closure of the entrance to the Aqua Hedionda Lagoon	-	-	II	-
	Impacts to existing eel grass populations in the Lagoon from dredging.	III	III	IV	III
	Impacts on recruitment of *Macrocystis*, other kelp species and impacts on other biological resources from turbidity related to dredging operations.	III	III	III	IV
	Potential risk for dispersing *Caulerpa* populations in Agua Hedionda Lagoon.	-	III	III	III
	Potential for impingement/entrainment impacts	-	-	III	-
	Disturbance of habitat during construction of cooling water intake outfall	-	-	III	-

Impact No.	Impact Description	Proposed Project	No Project	Alt 1: Offshore Water Intake Structure/ Cessation of Lagoon Mainte-nance Dredging	Alt 2: Reduced Mainte-nance Dredging
Section 4.2 Hydrology and Water Quality					
WQ-1	Beach Deposition on North Beach. Impacts to coastal processes and patterns of sand deposition could result in the widening of North Beach	IV	-	-	-
WQ-2	Beach Width Reduction on Middle Beach and South Beach. Impacts to coastal processes and changes in sand deposition and erosion could reduce the widths of Middle and South beaches.	II	-	-	-
	Impact from dredging on water quality i.e. increased turbidity	III	-III	-	III
	Impact of reduced dredging and potential for overdredging resulting in lower water velocities and sedimentation rates in Agua Hedionda Lagoon.	III	-	_	III

Section 4.3 Aesthetics/Visual Resources					
VIS-1	Beach Width Reduction on Middle Beach and South Beach. Potential short-term and long-term increase in erosion causing decreased beach width for about 1 mile south of the northern inlet jetty.	II			
	Impact from offshore construction staging of vessels and equipment.	-	-	III	-
Section 4.4 Recreation					
REC-1	Increased Width of North Beach. The widening of North Beach will be a beneficial impact to certain beach-related recreational activities.	IV			
REC-2	Changes in Surfing Conditions at Tamarack Beach. Changes in surfing conditions potentially conflict with established recreational use and have the potential to substantially alter surfing-related existing recreational use opportunities.	I			
REC-3	Changes in Surfing Conditions at South Beach. Changes in surfing conditions potentially conflict with established recreational use and have the potential to substantially alter surfing-related existing recreational use opportunities.	I			
REC-4	Narrowing of Middle Beach and South Beach. Conversion of sandy beaches into gravel beaches will substantially conflict with existing recreational uses.	II		-	

ALT 1 REC-1	Impact to existing recreation values in Agua Hedionda Lagoon from degraded water quality resulting from closure of entrance to Agua Hedionda Lagoon.	-	-	II	-
	Reduced recreational access and opportunities at Middle Beach during construction		-	III	-

ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The State CEQA Guidelines [Section 15126.6 (d)] require that an EIR include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed Project. The State CEQA Guidelines [Section 15126.6 (e)(2)] further state, in part, "*If the environmentally superior alternative is the "No Project" alternative*, the EIR shall also identify an environmentally superior alternative among the other alternatives." (Emphasis added). Each of the remaining alternatives analyzed in the Draft EIR/EA is briefly discussed below.

The Offshore Water Intake Structure/Cessation of Lagoon Maintenance Dredging Alternative (Alternative 1) would avoid all of the identified impacts associated with the proposed Project on biological resources, hydrology and water quality, aesthetics/visual resources, and recreation resources. The impacts of intake construction could be mitigated to less-than-significant levels, and would be short-term. The impacts of operating the intake system in an open ocean environment, namely the entrainment of fish into the intake structure, would be similar to the impacts associated with current operations within the Lagoon.

The cessation of dredging, however, has the potential to substantially impact the resources associated with Agua Hedionda Lagoon. The existing tidal circulation could be reduced or eliminated over time by unabated sedimentation. This would substantially alter the existing water quality and cause significant impacts to biological, aesthetic, and recreation values within the Lagoon. These potential impacts to Agua Hedionda Lagoon would need to be mitigated. Specifically, periodic dredging averaging an estimated 20,000 cubic yards per year would be needed to ensure that the inlet remains open and that current water quality is maintained.

The Reduced Dredging Alternative (Alternative 2) would also avoid significant impacts upon aesthetic resources, recreation, hydrology and water quality, and biological resources associated with the proposed Project and reduce the negative effects on biological resources in the Lagoon related to over dredging.

Neither of the above alternatives, as mitigated, would result in long-term significant impacts. While Alternative 1 involves construction related impacts, such impacts would be short term and less than significant. Each alternative would involve ongoing dredging of the Lagoon inlet; however, the potentially amount of material to be removed under Alternative 1 is 13 percent of the amount required under Alternative 2. The need to remove less material would result in a reduction of the length of time in which impacts

associated with dredging would occur. In addition, existing eel grass populations in the channel would be less affected and additional area in which eel grass could colonize would result as a consequence of additional sedimentation of the southern potion of the basin.

Accordingly, on balance, Alternative 1 (Offshore Water Intake Structure/Cessation of Lagoon Maintenance Dredging Alternative), as described herein, appears to be the "environmentally superior alternative" as envisioned by Section 15126.6 (e)(2) of the State CEQA Guidelines.

KNOWN AREAS OF CONTROVERSY OR UNRESOLVED ISSUES

The extent to which the proposed Project could affect coastal processes within the area and, summarily, the nature and extent of resultant modifications to Tamarack, Middle and South beaches and associated surf conditions is a known area of potential controversy that has been acknowledged and analyzed in the Draft EIR/EA. Such controversy is due in part to an inability to predict, with absolute certainty, how complex natural processes in the project area might respond to coastal structures and substantial subtidal deposition.

Although the above may also be characterized as an unresolved issue, these matters have been addressed in the EIR/EA to the extent possible with existing site-specific data, scientific information and analytical methodologies.